



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/506,594	06/14/2005	Scott Nichol	34761/US/2	1396
<div>20686 7590 01/11/2008</div> <div>DORSEY & WHITNEY, LLP</div> <div>INTELLECTUAL PROPERTY DEPARTMENT</div> <div>370 SEVENTEENTH STREET</div> <div>SUITE 4700</div> <div>DENVER, CO 80202-5647</div>				
			<div>EXAMINER</div> <div>ZHENG, LOIS L</div>	
			<div>ART UNIT</div> <div>1793</div>	<div>PAPER NUMBER</div>
			<div>MAIL DATE</div> <div>01/11/2008</div>	<div>DELIVERY MODE</div> <div>PAPER</div>

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/506,594	Applicant(s) NICHOL ET AL.	
	Examiner Lois Zheng	Art Unit 1793	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 June 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 12-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 12, 13 and 22 is/are rejected.
- 7) ☒ Claim(s) 14-21 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>9/3/04, 8/18/05</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Status of Claims

1. Claims 1-11 are canceled in view of the preliminary amendment filed 30 March 2006. New claims 12-22 are added in view of the preliminary amendment. Therefore, claims 12-22 are currently under examination.

Drawings

2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: Fig. 1 #40 and A.

3. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: Gas supply line 170 on line 11 of page 5 and inner surface 126 on line 23 of page 5.

4. Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be

notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 12-13 is rejected under 35 U.S.C. 102(b) as being anticipated by Jewell et al. US 2,336,017(Jewell).

Jewell teaches a gas discharge apparatus comprising a rotatable hollow shaft having a first end connected to a gas supply and a second end extending upwardly into a container through an opening in the bottom of the container(Fig.; page 2, left column, lines 53 – 70), a driving means for rotating the shaft(Fig. #11; page 2, right column, lines 44-46), wherein in the second end includes a gas discharge nozzle(Fig. #17-18). The rotatable shaft as taught by Jewell further comprises a seal to form a direct sealing engagement with the rotatable shaft and the container(See Fig. "fluid tight bearing")..

Regarding claim 12, the gas discharge apparatus as taught by Jewell reads on the claimed gas discharge impeller.

Regarding claim 13, the weight of the hollow shaft and the weight of the other equipment on the shaft, such as motor, pinion, thrust bearing, etc. reads on the claimed means for urging the shaft downwardly against said seal for forming a sealing engagement with the container bottom.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 12-13 and 22 rejected under 35 U.S.C. 103(a) as being unpatentable over EP 1,127,610 A2(EP'610) in view of Jewell.

EP'610 teaches a gas discharge apparatus comprising a rotatable shaft comprising a drilled hole extending upwardly into a container through an opening in the bottom of a molten metal container (Fig.; paragraphs [0007-0008 and 0011]), a driving means for rotating the shaft(Fig. #12; paragraph [0008]), wherein in the top end of the shaft includes a gas discharge nozzle(Fig. # 18). The rotatable shaft as taught by EP'610 further comprises a seal to form a direct sealing engagement with the rotatable shaft and the container(Fig. #4 and paragraph [0008]).

However, EP'610 does not teach that the rotatable hollow shaft has a first end connected to a gas supply as claimed.

The teachings of Jewell are discussed in paragraph 6 above.

Regarding claims 12 and 22, it would have been obvious to one of ordinary skill in the art to have incorporated the connection to the gas supply as taught by Jewell into the apparatus of EP'610 in order to supply gas to the molten metal container through the drilled hole within the rotatable shaft.

Regarding claim 13, the weight of the hollow shaft, the weight of the gas distribution system at the second end of the hollow shaft and the weight of the other equipment on the shaft, such as motor and bearing, etc. read on the claimed means for urging the shaft downwardly against said seal for forming a sealing engagement with the container bottom.

Allowable Subject Matter

9. Claims 14-21 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

10. The following is a statement of reasons for the indication of allowable subject matter: The prior art of record either alone or in combination, does not teach or fairly suggest the claimed gas discharge impeller having a seal with the claimed structure as recited in claim 14.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lois Zheng whose telephone number is (571) 272-1248. The examiner can normally be reached on 8:30am - 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on (571) 272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Application/Control Number:
10/506,594
Art Unit: 1793

Page 6

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

LLZ


ROY KING
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700